



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/594,157

09/26/2006

Ian Alastair Kirk

ZQ120/07001

7042

22884

7590

03/31/2010

MIDDLETON & REUTLINGER

2500 BROWN & WILLIAMSON TOWER

LOUISVILLE, KY 40202

EXAMINER

FULLER, ROBERT EDWARD

ART UNIT

PAPER NUMBER

3676

MAIL DATE

DELIVERY MODE

03/31/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,157	Applicant(s) KIRK ET AL.	
	Examiner ROBERT E. FULLER	Art Unit 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,7-10,13-37 and 40-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,7-10,13-37 and 40-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 21, 2010 has been entered.
2. Applicant's submission has been carefully considered. Examiner has withdrawn the claim objections, as well as the 112 rejection set forth in the previous Office Action. However, examiner has added a new 112 rejection, and the claims now stand rejected based on newly discovered prior art.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 10 recites that the sleeve "is clamped to the drill string by an annular clamp placed around the sleeve". This does not make sense, since the sleeve cannot clamp

Art Unit: 3676

around itself. Examiner assumes that the claim is referring to the bushing, rather than the sleeve. However, even if this is the case, the bushing is not “clamped”, but rather, it is a clamp. Appropriate clarification is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 8, 13, 14, 20-22, 24, 26, 35-37, 40-42, 44, and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Buttolph (US 2,589,534, hereinafter ‘534).

With regard to claims 1, 35, 36, 44, and 45, ‘534 discloses an apparatus for mobilizing drill cuttings in a well, the apparatus comprising a sleeve (13) adapted to be opened to fit around a drill string in the well, and to be closed around the drill string and clamped thereon to secure the sleeve to the drill string (column 5, line 40), at least one vane (26) provided on the sleeve, the sleeve having a bearing region (i.e. its outer surface), at least one bushing (14) that is rotatably mounted on the bearing region of the sleeve (see column 5, lines 64-71), at least two blades (51) mounted on the bushing, the at least two blades defining at least one fluid conduit between adjacent blades, the blades and vane being rotatable relative to one another.

With regard to claims 2 and 37, since ‘534 discloses vanes and blades which are relatively rotatable, then ‘534's apparatus will create a pressure difference in a fluid flowing past the vanes and blades.

Art Unit: 3676

With regard to claim 8, the blades extend helically (see Fig. 5).

With regard to claims 13, 14, 40, and 41, the vanes are rotationally fixed to the drill string and create thrust when rotated.

With regard to claim 20, the bushing is rigid, since it is made of metal.

With regard to claim 21, the sleeve is annular, and accommodates a tubular (10).

With regard to claim 22, the vanes are integral (see Fig. 5).

With regard to claim 24, the blades are integral with the bushing (see Fig. 5).

With regard to claim 26, the vanes are parallel to the axis of rotation (see Fig. 5).

With regard to claim 42, the blades (51) centralize the sleeve within the wellbore (see Figs. 1-3).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 3676

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over '534 in view of Yancey (US 2,794,617).

'534 fails to disclose blades that extend farther than the vanes.

Yancey discloses blades (56) which are rotatable relative to vanes (42), and the blades extend farther than the vanes (see Fig. 2).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have extended the blades of '534 past the vanes, as Yancey discloses that this type of configuration was well known in the art and would have yielded predictable results.

9. Claims 7, 9, 10, 15-19, 23, 25, 27-29, 30-33, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over '534.

With regard to claims 7, 9, 29, and 30, '534 discloses the vanes being parallel to the axis of rotation, while the blades are offset from the axis. Therefore, '534 fails to disclose the blades being parallel and vanes being offset. '534 also fails to disclose the specific angle of offset. Furthermore, '534 fails to disclose the vanes and blades being offset in opposite directions.

It would have been considered obvious to modify '534 to offset the vanes, rather than the blades, as this would have amounted to the mere reversal of the parts of '534. It also would have been considered obvious to offset the vanes and blades in opposite directions, as this type of configuration was well known for creating upward thrust and turbulence in the wellbore, and therefore would have yielded predictable results. See Yancey for example, which shows offset vanes and parallel blades. See also US

Art Unit: 3676

2,352,412 to Sandstone, which shows oppositely offset vanes and blades. Finally, it would have been considered obvious to offset the blades of '534 by 3-10 degrees, as it has been held that discovering an optimum value of a result effective variable (i.e. the offset angle) involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With regard to claims 10 and 43, '534 discloses the bushing being a solid sleeve, rather than a clamp. However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the bushing of '534 as a clamp, rather than simply a solid annular sleeve, in order to increase the ease of installation, removal, and repair of those devices (see for example US 6,250,405, US 5,833,019, US 4,796,670, US 4,266,578, US 3,894,780).

With regard to claims 23 and 25, '534 shows both the vanes and blades being integral with the sleeve and the bushing, respectively. However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have made the vanes and blades of '534 separable and modular, rather than integral, to increase the ease of repair of the device, and because it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

With regard to claims 15-19, 27, 28, and 31-33, '534 fails to disclose the claimed shapes of the blades and vanes. However, these shapes are all well known, as shown by US 4,676,716 and US 3,882,946 (asymmetrical foil-shaped blades), US 6,056,073 (scooped, concave vanes), and US 5,074,356 (sinusoidal vanes). It would have been

Art Unit: 3676

considered obvious to one of ordinary skill to have used anyone of the claimed blade/vane shapes, as this would have been a matter of simple substitution of one known configuration for another.

10. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over '534 in view of Shizawa (JP62101149).

'534 fails to disclose the blades comprising a notch.

Shizawa discloses a mixing/agitating device having a blade (14) comprising multiple notches (13).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have provided the blades of '534 with notches, as Shizawa states that "turbulences and divisions are generated by the flow caused by respective notches and blades...to mix and agitate the fluids more effectively" (see Shizawa Abstract).

Response to Arguments

11. Applicant's arguments with respect to claims 1, 35, 36, 44, and 45 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT E. FULLER whose telephone number is (571)272-6300. The examiner can normally be reached on Monday thru Friday from 8:00 AM - 5:30 PM.

Art Unit: 3676

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shane Bomar/
Primary Examiner, Art Unit 3676

03/26/2010
/R.E.F./